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Chronic CAD/Stable Ischemic Heart Disease

DOES NEOVASCULARIZATION PREDICT RESPONSE TO STATIN THERAPY? OPTICAL COHERENCE TOMOGRAPHY STUDY

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Monday, March 26, 2012, 11:00 a.m.-Noon

Session Title: Not the Usual Inflammation, Statin and Platelet Stuff
Abstract Category: 3. Chronic CAD/Stable Ischemic Heart Disease: Therapy
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Background: Angiogenesis in atherosclerosis is reminiscent of angiogenesis in tumor. It is widely accepted that tumor neovascularization (NV) has a substantial influence on tumor response to cytotoxic therapies in a clinical setting. Likewise, it is possible that the presence of NV within atherosclerotic plaques can influence the effect of anti-atherosclerotic therapy on plaque stabilization or regression. we sought to determine whether NV within lesions could predict the anti-atherosclerotic effects of statin therapy as evaluated by optical coherence tomography (OCT).

Methods: 40 unstable angina pectoris (UAP) patients with 61 non-culprit lesions were statin-naive, which was defined as receiving no statin therapy for more than 3 months during the previous 12 months. Patients underwent follow-up OCT and intravascular ultrasound imaging after 6 and 12 months of atorvastatin (20mg) or rosuvastatin (10mg) therapy.

Results: Reduction in the levels of total cholesterol and low density lipoprotein cholesterol was comparable in UAP non-culprit lesions with and without NV. The absolute and percent increase in fibrous cap thickness from baseline to 6 month follow-up were significantly greater in non-culprit lesions without NV than those with NV (24±28μm vs. 12±17μm, P=0.053 and 40±50% vs. 21±31%, P=0.076, respectively). The absolute and percent increase in fibrous cap thickness from baseline to 12 month follow-up were significantly greater in non-culprit lesions without NV than those with NV (49±34μm vs. 29±15μm, P=0.002 and 81±59% vs.51±31%, P=0.012, respectively).

Conclusions: With a comparable reduction in serum cholesterol levels, the thickening of fibrous cap was greater in UAP non-culprit lesions without NV than in those with NV after 6 and 12 months of statin therapy, which indicates that a more aggressive anti-atherosclerotic therapy may be useful in patients with plaque with NV.